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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,571	08/27/2001	Koji Ono	35.C15701	1644

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
ORTIZ, EDGARDO

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/938,571	Applicant(s) Ono
	Examiner Edgardo Ortiz	Art Unit 2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jun 26, 2003* .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1, 7, 13, 14, 17, 19-21, 24, and 26-29* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1, 7, 13, 14, 17, 19-21, 24, and 26-29* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

This Office Action is in response to an amendment filed June 26, 2003 on which Applicant amended claims 1, 7, 13, 17, 21, 24 and 26-28.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 7, 13, 17, 19, 20, 24, 26 and 27 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Segawa et.al. (U.S. Patent No. 5,506,401) in view of Kelly et.al. (U.S. Patent No. 6,396,116) and further in view of Furukawa et.al. (U.S. patent No. 6,262,513). With regard to Claim 1, Segawa teaches a solid-state image pickup element chip (112) on which a plurality of image pickup elements (115) are mounted, said solid-state image pickup element chip being formed on a light incident side of said substrate, a protection cap (101) provided on a light incident side of said solid-state image pickup element chip and adapted to protect said solid-state image pickup element chip and a wiring substrate (102) formed of a flexible material and connected electrically to said solid-state image pickup element chip, wherein a connection between said solid-state image pickup element chip and said wiring substrate is fixed only at a

bump (6) formed on an electrode pad (5) and wherein the solid-state image pickup element chip and the protection cap are sealed with a resin (116) and are made of the same material (glass) and thus have a thermal coefficient substantially equal and form a hollow space. See figure 1.

However, Segawa fails to teach a substrate provided with no wiring and supporting the solid-state image pickup element chip. Kelly discloses an integrated circuit package including a substrate (430) provided with no wiring which supports a substrate (406) having a semiconductor element (404) on top of the substrate and a protection cap (416), see figure 4A. Regarding the material of the substrate with no wiring, Furukawa discloses an electronic component including a circuit board comprising glass. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Segawa to include a substrate provided with no wiring and comprising glass, as suggested by Kelly and Furukawa, in order to provide a supporting substrate with no wiring. made of a material as that of the solid-state image pickup element chip and the protection cap and thus enable irradiation of a light receiving surface of a CCD.

With regard to Claim 7, With regard to Claim 1, Segawa teaches a solid-state image pickup element chip (112) on which a plurality of image pickup elements (115) are mounted, said solid-state image pickup element chip being formed on a light incident side of said substrate, a protection cap (101) provided on a light incident side of said solid-state image pickup element

chip and adapted to protect said solid-state image pickup element chip and a wiring substrate (102) formed of a flexible material and connected electrically to said solid-state image pickup element chip, wherein a connection between said solid-state image pickup element chip and said wiring substrate is fixed only at a bump (6) formed on an electrode pad (5) and wherein the solid-state image pickup element chip and the protection cap are made of the same material (glass) and thus have a thermal coefficient substantially equal and form a hollow space. See figure 1.

However, Segawa fails to teach a substrate provided with no wiring and supporting the solid-state image pickup element chip. Kelly discloses an integrated circuit package including a substrate (430) provided with no wiring which supports a substrate (406) having a semiconductor element (404) on top of the substrate and a protection cap (416), see figure 4A. Regarding the material of the substrate with no wiring, Furukawa discloses an electronic component including a circuit board comprising glass. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Segawa to include a substrate provided with no wiring and comprising glass, as suggested by Kelly and Furukawa, in order to provide a supporting substrate with no wiring. made of a material as that of the solid-state image pickup element chip and the protection cap and thus enable irradiation of a light receiving surface of a CCD.

With regard to Claim 13, Segawa teaches an optical low pass filter or infrared rays cut filter formed on the protection cap (101), see column 5, lines 6-9.

With regard to Claims 17 and 24, a further difference between the claimed invention and Segawa is, the solid-state image pickup element chip is adhered on to said substrate that is provided with no wiring with a flexible adhesive. Kelly teaches a substrate (430) provided with no wiring having a semiconductor element (404) on top of the substrate, wherein the semiconductor element is adhered to the substrate provided with no wiring by an adhesive (442), see figure 4A.

With regard to Claims 19 and 26, Segawa and Kelly essentially disclose the claimed invention but fail to show that the substrate provided with no wiring is one of a glass substrate, a ceramic substrate, a metal substrate, a resin substrate, a resin substrate or a substrate formed by stacking two or more of glass, ceramic, metal and resin substrate. Regarding the material of the substrate with no wiring, Furukawa discloses an electronic component including a circuit board comprising glass. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Segawa and Kelly to include a substrate provided with no wiring and comprising glass, as suggested by Furukawa, in order to provide a supporting substrate with no wiring. made of a material as that of the solid-state image pickup element chip and the protection cap and thus enable irradiation of a light receiving surface of a CCD.

With regard to Claims 20 and 27, Segawa teaches a sealing resin (116) comprising epoxy, see column 6, lines 5-6.

Claims 14, 21, 28 and 29 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Segawa et.al. (U.S. Patent No. 5,506,401) in view of Kelly et.al. (U.S. Patent No. 6,396,116) and further in view of Furukawa et.al. (U.S. patent No. 6,262,513)and further in view of and further in view of Nakamura et.al. (U.S. Patent No. 5,138,145). With regard to Claim 14, as stated supra, Segawa, Kelly and Furukawa essentially disclose the claimed invention but fail to show a light shielding layer at a periphery of the protection cap. Nakamura teaches an image sensor with simplified chip mounting that includes an image pickup element chip formed on a substrate through a light-shielding layer (40) that comprises a flexible adhesive of resin. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Segawa, Kelly and Furukawa, to include a solid-state image pickup element chip formed on the substrate through a light-shielding layer, as clearly suggested by Nakamura, in order to prevent malfunction of the device that may be caused by light reflection.

With regard to Claims 21 and 28, a further difference between Segawa, Kelly and Furukawa and the claimed invention is, a light shielding layer between the substrate and the solid-state image pickup element chip. Nakamura teaches an image sensor with simplified chip mounting that

includes an image pickup element chip formed on a substrate through a light-shielding layer (40) that comprises a flexible adhesive of resin. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Segawa, Kelly and Furukawa, to include a light shielding layer between the substrate and the solid-state image pickup element chip, as clearly suggested by Nakamura, in order to prevent malfunction of the device that may be caused by light reflection.

With regard to Claim 29, a further difference between Segawa, Kelly and Furukawa and the claimed invention is, a light shielding layer formed of a light shielding and flexible adhesive. Nakamura teaches an image sensor with simplified chip mounting that includes an image pickup element chip formed on a substrate through a light-shielding layer (40) that comprises a flexible adhesive of resin. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Segawa, Kelly and Furukawa, to include a light shielding layer formed of a light shielding and flexible adhesive, as clearly suggested by Nakamura, in order to prevent malfunction of the device that may be caused by light reflection.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 7 and 13, 14, 17, 19-21, 24 and 26-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Edgardo Ortiz (Art Unit 2815), whose telephone number is (703) 308-6183 or by fax at (703) 308-7724. In case the Examiner can not be reached, you might call Supervisor Eddie Lee at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 receptionist whose telephone number is (703) 308-0956.

EO/AU 2815

9/4/03

JEROME JACKSON
PRIMARY EXAMINER